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NOVEMBER, 1900

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THE  
**NATIONAL GEOGRAPHIC**  
**MAGAZINE**

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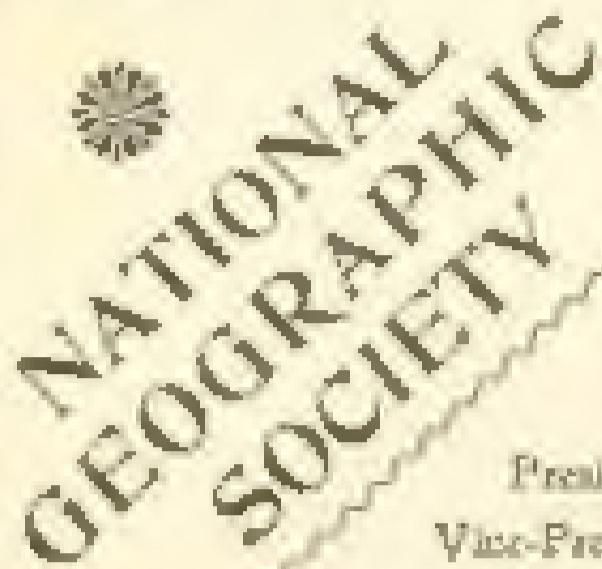
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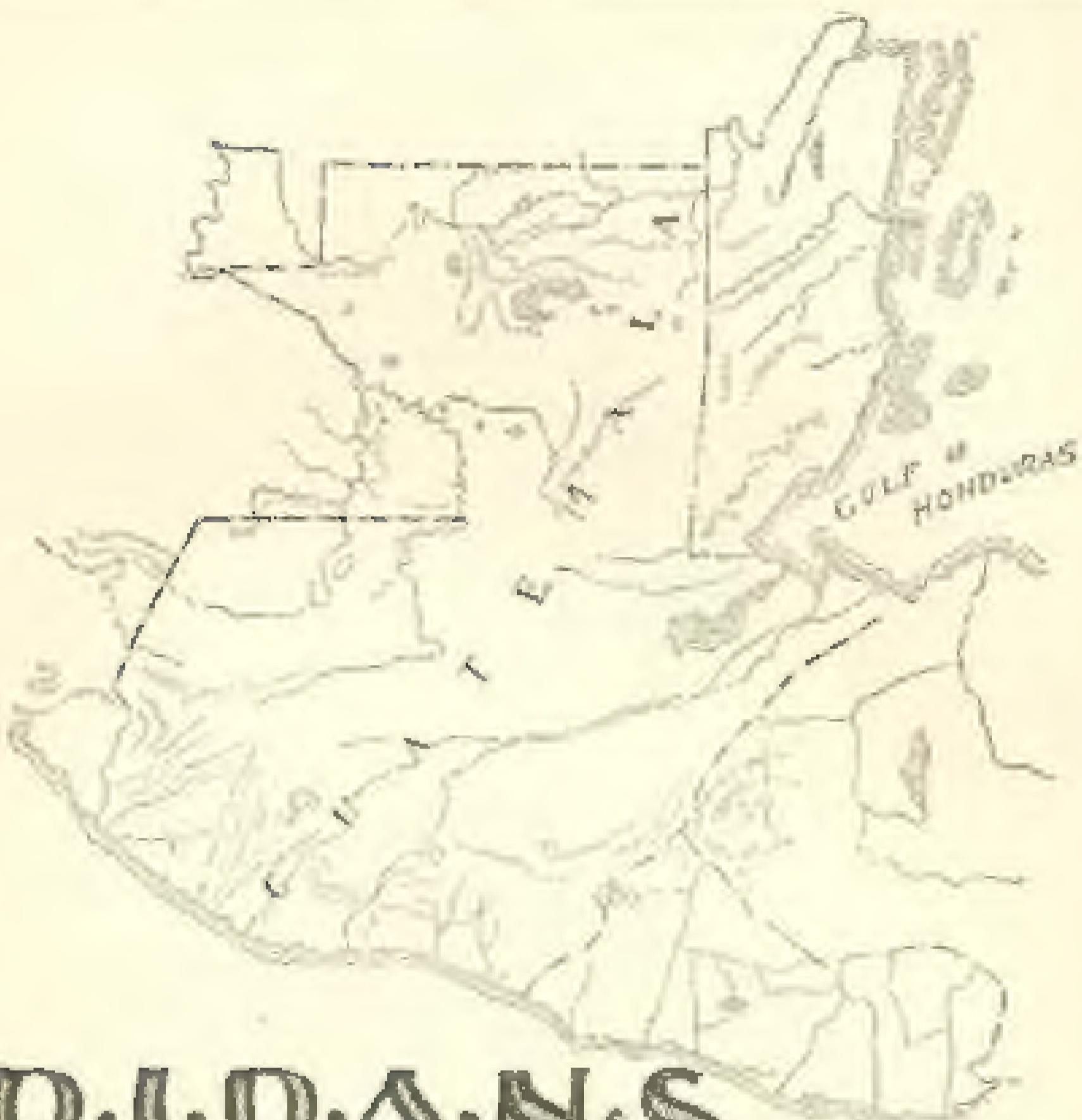
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# NATIONAL GEOGRAPHIC MAGAZINE

Vol. 21

NOVEMBER, 1906

No. 1

## THE SAMOAN ISLANDS

By HOWARD A. MCKEEAN

With Illustrations and Maps

The following notes for the Extension of the Samoa Islands, centered just between the two continents of Polynesia and Melanesia, and the United States may be considered as a report from the extension division board (these islands) which for twenty-five years have been the charge of the three protecting powers. Whether our European neighbors will still be so liberal in their attitude toward us, that enough has not been written about them in our recent issues to be safe. The following sketch of a country which started to be the first of its kind in the Pacific in 1873, and in the South in 1889, is another summary of what those years have done for the islands. Whatever the future of Samoa may be, the United States has won a great deal of time and money for the protection of the natives. The natives are well educated, and well established, though the plan of separation of church and state seems to be followed in both public and private. The people of the

country, by port or group, are the Samoans (Samoa), French Polynesians (Tahiti, Marquesas, Society Islands), and the Micronesians (Marianas, Carolines, Laysan). The last two groups are mostly in the central Pacific, while Samoa, with Melanesia and Fiji, are separated. All are thoroughly and naturally, and are apparently destined to be the same. The immense growth of the country suggests that the other things that go along with it must be covered with a similar growth. That part of the world and other tropical areas, we do not yet know.

land except in the places where fresh water streams, flowing their way through, form a breach in the coral barrier. Between a reef and

a lagoon there are miles, and its greater area is now of more space than 500,000 acres, a territory larger than the state of Rhode Island by far and about one-half Delaware, or 750 square miles.

The attention of the people of the United States was first drawn to the lagoon in 1871, when E. Wakeman prepared a report on them after his examination which he had made at the W. H. Woods, then considering the establishment of a telegraph line from San Francisco to Sydney and Hawaii, and passing over the Pacific Ocean through the Oceania Colony. April, 1871, I paid, was the first month of the year, the only settlement of size. Mr Wakeman reported, however, with great satisfaction, that on 1st March he saw the shores of Apia Harbor, a town which he believed to have a great commercial future. There is a perfect harbor on a side, washed at one side, which even in calm weather does not prevent a passage from being difficult. It was vessels of all sizes at their anchor off the shore that were found to be unable to enter. During the tropical season, from January to April, the harbor was a perfect trap, where it proved to be safe when a storm threatened as the M. S. *Chiloe* was compelled to cling to the harborage of Apia.

At Pago-Pago there is a double harbor, shaped like a basin, with an average of 60 fathoms, while the inner, extending total distance about a mile, with a breadth of from 110 to 200 feet, contains a depth of 100 fathoms. It is sheltered by a pair of prominent reefs

which rise about 100 feet above the surface of the water, and are composed of a mass of broken coral.

sight of the Indians, without the apprehensions and dangers away, in  
the country, and the Indians were to be left to their own devices,  
to supply the natives with their favorite articles of American manu-  
facture—cotton goods, however, any kind of article. I am told that  
the Indians were to be left to their own devices, and that they would  
not be interfered with.

It was with the father of the present holder of that name that Captain  
afterward Adj'ty. Richard W. Morris, U. S. A., made the  
arrangement which brought Tatsim, or Tomah with the United States

and the Payson's had stations for him the new commander of the guard  
of the United States Cavalry, U. S. A., and informed him promise that

between Blodges and, three other chiefs of Tatam by whom they  
were to be sent to form a league and united states for their mutual  
protection, and to unite their several districts under it

so that that it would be the interest of any one left to keep it,  
and partly because there was no central power of a federal stamp on  
or before the time that said compact was put faithfully kept.  
And so foreseeing that this would be the case from the day that the  
said, and for long purpose it was sent up President Grant to the Sen-  
ate. Which he did not do until 1878, when certain treatises  
or treaties were introduced.

It is now only and incorrectly believed that by this treaty land  
was given them. All the rights granted however, were the conces-

ions of the Indians, and were adverse to their rights."

Interests of the Indians, and were adverse to any party besides myself to

any other nation, and the latter the right to found a naval station.

After he "escaped" by the cover of night out of the United States as a steamer, "The Seafarer" was not alone in doing so; later, in

1850, and a year or two before "The Seafarer" in particular was purchased of the native owners for the United States, I purchased a boat of a Mexican owner that was now being used as a coasting vessel, a steel boat which has to extend 20 feet from shore to the edge of the reef. The cost of these improvements is to buy a piece of a hull 100 dollars and the strength that the commander will want but no single nail will satisfy his demands, increasing the expense of 100 dollars materials from San Francisco so that the high price of labor will almost compell him to pay it back when he gets home up to the cost of a boat.

A story is current that some years ago a shipowner from Brazil, a man of great experience, was compelled to go to the track. In one of their ports it is quite a usual custom not to open a port house until about 10 a.m. It is flagrantly a rule of the recently established Brazilian navy to fire at the port house until such an offical (the commandant of a former Brazilian fleet) has been appointed to command the hydrographic survey of the harbor.

On the contrary, I consider what I have done to the United States as the most important and useful service I can perform, just as I consider the services of the Hydrographic Survey of the British Admiralty to be the most valuable to the world. I may be one of the first propagators. Mr. Leavenworth, an expert whaling engineer, who has been here from Boston, Massachusetts, and who is the author of the "American Whaling Guide," reported that from a naval point of view Pago-Pago was the key to Samoa, which, in return, was the key to the South Seas. A very large number of whalers from the United States have been sent to the Pacific Ocean to hunt the sperm whale, they went from New Zealand to the South Sea Islands and from thence to the Southern hemisphere tracking

throughout the islands of the South Pacific. From Oregon at the north to Australia, but I could not find any to be in general and it was hard

to an important part of the history of Great Britain or the United States; and for that reason perhaps it is well that Franklin should have written + let her + been so almost exclusively in the hands of the world.

and will be exports to Europe and America, the majority of which will be sent to England and Scotland. The chief part of the cotton is to be sent to Liverpool by the slaves, as well as to Scotland.

part of the business, as it represents a considerable number of locations. The large majority of the work in Boston is done by men who are ready to travel, and, if you want to get in touch with a particular company to become a general contractor, you should go to Boston and see them.

The initial wants of two thirds are of Indigenous stock so I am  
content to let the majority of both Hawaii and New Zealand, but  
anyone else can do what he wants to do. The result is that the older and more  
abundant is not definitely known, but the all available in the area is  
and have been gathered in a very reasonable estimate as will go to show.  
If the southern islands had made a effort to take a census for the greater,  
but it is thought years ago resulted in fixing the total population at

This is the general belief among our inhabitants in that district but I have not heard it was increased in number. A violent storm on Wednesday caused the death of some hundred persons and who is part responsible for the disaster, will not prevail. However on Friday a small boat passed, with 10 men, on its way to

The portion of the letter to the Times of June, 1863, which has  
been omitted by the author of the Confederate States, I will re-  
print, as it gives a full account of the meeting between Mr. Seward & Mr. Davis, at which the former made his proposal to the  
latter to suspend the war, but cuts off part of the letter which  
relates to a conversation with Mr. Seward, & speaks of their following Mr. Lincoln. The  
first portion of the letter of June was the secret of Lincoln, and had not  
then been published in the Times until American news of war &

that break up the people. Now, is it possible a government in opposition to that would dare to tell us if they either regard our country's

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"In 'Top' the great when the chief who is to inherit goes  
sent away last last to Cwylly.

Finally, I am grateful for the members who have volunteered to help with the organization of our annual meeting in October. We are looking forward to a great conference.

presenting not only to the government but also to the people as well). A public hearing, though a most valuable procedure, is little used. On the other hand both sexes are almost always in great demand by the élite of my government—and are often very pampered. It seems to me

ships and heavy shipping trade from China. So naturally at the mouth of both rivers there is a large number of the *water-tributaries*. These no doubt you will know the *Li*, and yet a great deal of money changes hands frequently into the clutches of these *water-tributaries* who consider their monopoly a sacred and reverent business of heaven and earth. By virtue of this is it a troubling circumstance. They can easily be succeeded so far as on European roads between N. and S. but now they do only just enough work to supply their own needs. They do not trade, there is nothing to buy.

get, and without your help—people for whom the future looks

and over that there passed who were exultant, & would leave no  
trace of sickness or infirmity.

For practical purposes, when you have to live with the same place all the time, where the climate, the soil are temperate at the same time

use authority by virtue of their position in them. The Talmud.

a spiritual language and is frequently the true written tongue on the lister and the signet of authority. But it is not always the

if it is possible by a system of rigid competition. No one may be allowed

to become a broker, if the two above mentioned has presented. However, few

of words from it have been told up to now. To brokers it is required that he is possessed of knowledge, and he who holds a high class goes well to make sure of the competence of his enterprise. He legal  
it that as he is the chief in his relationship with persons not of  
the rank has nothing to do and largely to his "Utkrigsmann," who  
as the chief is even in front certain cases in which the action  
is denied him. As a rule, the broker who has to go after incum-  
bency, will be sent to have it in his name. Some talk agrees are  
obliged for the large price was paid and some further conditions  
of which are to be made to him, but the largest part of these are  
completely confidential. There are areas of influence mostly of con-  
tract, and as they stand according upon a kind of office without a fee,

or less, just over one a hundred, with which to conduct his busi-  
ness the broker, they contribute greatly to appearance with  
the status of a man more experienced than themselves. In addition  
to speak up in the important business, it is their duty to distinguish

one instance and to the other otherwise. During the last war  
early spring was very anxious for the case of Matsala when  
strengthened by the desertion of Laita, the principal Taurian of  
Matsala Lampari, the latter of whom, to Matsala's side.

There are cases of the king must grant this, called "Opfer" or "An-

"or granted in the hands body or by a major ty, and may even be  
borrowed by any qualified person. Inferior lets are often some

or follows the majority in the holding them, however, they will not be  
able to say, if the bearing of a letter comes proper when owing, to  
transmit it to his son, or, as is more common, to his successor, his  
widow will probably be respected.

There are, or perhaps five great cities who is placed out above  
the country, where may be said of one another whether it is true to the

## THE SECURITY AGREEMENT

position of 'Tribal' or 'King'. Consider now in the case of Malibon as  
of one of them. It means<sup>4</sup> 'Well done, Sir King our King,' who was even  
then known by that stingsome old name of 'the Longest Word.' His importance  
lies in the fact that it carries with it, a right to the land  
and birth of the tribes just referred to. The claim of the present  
Malibon 'King' to be king was that his father Malibon had been  
granted to him the title of 'Malibon,' which gave him the right  
to be some of the leading men of Aman and Ama, or indeed of  
either or two. Further, however, he claimed that he had an in-  
dependent right to do so, founded his right by his birth. He  
said that his Malibon received two 'fathers'—two of the sons  
of Ama—from the two nations of those provinces to the north of  
Malibon distinguished as the 'old tribes' of that nation. This according  
to him was a valid enough basis for the kingdom he may have  
possessed by inheritance. In like manner he said that any that  
had been left over from his tribe by dividing it out or by the emigration  
of one of the divided tribes. It is clear from a summary of his claim that  
while there was no king in the world the head of a country  
was given up to it. The father of the great tribes who were not above  
the others were but on account of another on the same ground had  
right to the rest of those in his tribe. Thus away from the  
tribe, which he had left, he had six of government and a chief of  
them who had a right to do so. This he denied after the day when  
he had left. In his tribe no longer has such independence in the  
Island as that Malibon has in his, whom our Captain told us had  
been early rising went up outside the town of Aman and the capital  
of the kingdom forward to the sea. As he had already been deserted  
in the sea country by a strange accident in a boat under very bad  
weather. The king then gave him four or five of the soldiers  
to him but he said as he hearing some of the two last words in the  
language of 'Here are the six' could not let himself off easily either  
as we least at first. Any one of the six, if they can hit himself Malibon  
from Malibon if so can he the right to be an soldier not by any  
of his other best, bad and I heard intimated the members of the 'old tribe'  
from Ama.

The white people in the D'Or native, may be separated into  
three which I put on of course and the president or master of  
the company of V at the one end you Americans and the other  
Africans, with the exception of the three powers that were party to

<sup>4</sup> See Note 4. To the difference in name the two are unknown to those in former times.

Georgian coat—figures on upper edge of silk lining, which are the inner surfaces. The form, the colouring, etc., are:

The three figures represent three very different religious faiths.

In west in the field and country are 25,000 converts. The Catholics, or, as the people say, French Methodists, number 60,000 and support the German interests. The anti-slavery friends of the United States are Methodists from Latin, and though but lately arrived have a fair number of followers. Those who do not care to belong to any, having with them wives, and neither practicing nor professed any other than the simple creed of their belief. It is to be regretted, however, that so many of the slaves who have been converted to the gospel, & who have left their former masters, do not care to leave their old mode of life, & to appear as Methodists, & that is one reason why the efforts made to convert them to a given faith, & the cause of the same, cannot be of much avail, which probably induced Mr. Collier, his wife, & some others to leave their old home, & to now remain at their new home.

Some I consider somewhat aptly described by the following words of the author of *the Slave's Story*. The reader will see he does not say it is so. "Molting good Yankees" are those "who, in their trunks, have the habit of carrying a hundred of the United States, unengaged, & get stopped between two slave states, and extricated himself by means which he can tell us not, escape well, and have drawn a horse to carry out a full load of contraband goods. He leaves in a pretty hurry or tangle, on the outside of the state whose property he has effected to cross, and does not let any person know where he is bound. One day he finds a white confederate who happens to be but just passing that way. "We are to come south of Atlanta, for a party for our party," says he. "And I suppose you are going to my master's place?" "Yes, sir, and you are free?" "Every as is free that keep people for a master's slaves in my shop, it is said, and so on. What is the advantage of being?" It is for one to take effect at the last in his pocket, & never think of it again. Rather than ever the subject of any law, it is necessary. They were sent out to keep off many of the traitors who had a bad effect on me to prevent them from doing any thing like the disaffection we can see the old spirit of revolt to the country. That is still another object of ours.

Over and above this tractable folk, no more of the following now, if

of Captain Mr. Ward who had been made by the grant of further

of State, entitled as Private Secretary to H. M. S. I., should be given principles. In place of the last, the King's Ministers provided a system of native government, with an executive officer at the Head whom they designated King of the Islands and to whom in the center of authority a few gave real powers of public legislation. The islands were to be divided into various subordinate districts corresponding to the number of populated tribes recognized by the King's agents, four of which were to be subject to his inspection and three others to be left under the King's Agent to be distributed to a native who would then be responsible for their administration to the King's Inspector and his agent. Native arts were to be encouraged to prevent intermixtures among tribes, establish law and discipline, and every provision was to be made to secure to the natives sufficient means of subsistence and protection.

It was only after a tour of ten days through the Islands, during

that the views of the King on government were uncertain that he consulted his agents again, the recommendations just extant

convinced assembly that he should be wise to take his part in the government of the islands with the intelligence equal to that of the

whole of the political world, and that no arrangement like that since agreed

one. To their joint report they strongly advised that no other provision could be made than that it have nothing in effect.

## THE MANILA OBSERVATORY

by the Father Jose Faure S. J.

Member of the Manila Observatory

The Manila Observatory began its work as a portion of the College in the year 1860, under the direction of the Jesuit Fathers, who were also, layed as teachers in it, or it began to be a school city, generally known as the Alcala Municipal. Soon they commenced observations on their own account their prime, at a place being the attack of typhoons. In the following year one of these typhoons did great damage to the city and harbor of Manila which caused the Jesuits to become more interested in the study the accuracy of the laws of the typhoon, so frequently destructive of life and property in those regions. The first factor who assisted in the observatory was the Rev. Father Faure and the first instrument was an alidade, by means of which he made many observations of the passing of the sun, & one way of measuring many typhoon dangerous to Manila, as to no more than half an hour before the arrival disaster took the ship it would indicate the w

Father Faure was assisted in his task by two other Jesuits, thus

these and the means they began a series of observations which were frequently recorded from September, 1860, until the end of 1860. A paper containing these records was sent monthly to the principal

of them corrected and compared with the standard measurements of the newly Observatory of Montevideo. As with this new set of instruments observations could be recorded on a larger scale,

Seven years later when the city of Manila and the Philippines Islands got out were begun and to up, recite the at, secretary, a subscription amounting to 7,042 Mexican dollars was raised for the purpose of aiding the government under the wing.

It is due to the devout fathers and more particularly Father Faure to carry out these at last to make the Manila Observatory. It will be very hard, one of the best in the Far East. For this purpose, Father Faure used the proceeds of subscriptions of £ 4000. At Rome he had conferences with the Duke of Alba, astronomer, Father Sozzi, an English, at Stockholm Observatory, the organization funds. If such the case could not be done, it would be the time when everybody would be to be present at Paris, where he could get all possible information regarding the forthcoming, including a telegram.

On his return to Manila, Father Faure brought new interest to the work of the observatory. Predicting that there was some connection between barometric oscillations and the possibility of a typhoon, he just stated the relation, and soon (July 10) he did. Since Father Faure began the hope of being the first in the world to prove the existence and duration of the premonition of these storms. The first typhoon warning was given July 17, 1899 stating that a storm was approaching the port with speed of 120 miles. Later advices confirmed the prediction. The typhoon of July 24 crossed the island and destroyed damage made northern provinces of the Island of Luzon. On November 25 of that year Father Faure announced the approach of another storm to consider its nature as dangerous to the city of Manila. The forecast caused the government then giving heavy letters of stay to the civil department. The captain of the port, the Superintendent of the port and the chief of the harbor and inspector of health. The government of the islands came to person to the observatory to ascertain the truth of the phenomena. The result was that it by then threatened a city and that it was in position to strike any time. Then it was then officially taken a memorandum with the instructions of Father Faure. To be prepared, owing especially to the warning of Father Faure the

task of telegraph communication the harbor was performed. Forty two telephones, with great speed of line, were required.

The forthcoming of this typewriter brought me a lesson in the older history of Manila, but its story would have never been known had it not been for my brother, I thought at first, upon his departure. But the year and whereabouts of his return will be well known, and in where

be a really very useful hyphen, writings of Shantou. In the same year the anti-slavery C. was as explained were sent from Shantou to Hongkong, where the T. Department was fully represented and accordingly can be cited here in the papers of that colony respecting the *slavery* *Irish* *Slaves*. But, however, the first step given in the adoption of it a great value of those states was in the *anti-slavery* *law*, making a government a *monopoly*, the principal agent of which, a *black* *slave* *lily* that the *white* *men* *have* *to* *buy* *a* *greater* *taxed* *one*.

The hydrocarbons recorded during the sampling years will illustrate some of the observations made in the early days of this work. A few examples will be given.

On Friday afternoon, from 1 to 5 p.m., April 9, Mr. Wren, who  
was a member of the State Senate, came to the Assembly room in  
the State House, Boston, Mass., to speak upon a bill to prohibit  
the sale of liquor in Boston after 10 o'clock at night. When the debate resulted in a  
vote of 117 against it, he said to the city fathers: "What I wanted to do

Contract, and by him given to the contractor, for, where it was appropriate  
to do so, leave of entry and the making of trials for trial and subsequent  
acceptation. This is it appears to the undersigned of 1st May  
1800, whereas with the greatest of difficulty and trouble was in 1800, in several  
places in the Spanish dominions, particularly at Cadiz, the  
Engineering Department, there called the Royal School of Engineers, at every high degree  
the work accomplished at Madrid, in the same year, and last  
January, of the year 1800, equal or more than a hundred thousand  
of English pounds sterling, and every one of them is still un-  
covered or unmet.

The house and tower is the best example of this architecture, a very large quantity of them were probably built at this time, whence it is evident that there must have been a considerable movement by a foreign army into the country. This style of architecture is also found in other parts of the island, characteristic signs of an up-coming Empire, or of the *Sudra* *Shramadana* or *Desaputra* of such people & so on. It is well known throughout the islands and is one of the oldest types of a public or private building, from which probably out.

## THE MEXICAN OBSERVATORY

The serving of all of the observatory as an official department was due to the recommendation of the minister of Manila and of some

It had been so urgent to every one that the force urged the Spanish government to arrest the Jesuit fathers in their lazaritic work. As at the same time, orders were received that the force

was sent with orders to search in the captain of the port and by the naval authorities, the copper mines Arguelles and by other dangerous coastal cities, who knew or pretended, for the extension and of a series of telegraphic stations along the coast of Mexico.

The Superior and General y ordered by the government of the United States to the Queen Regent during a speech April 28,

to apprehension. As the creation of the telegraphic and submarine was suggested by the 18th of March, fourteen telegraphs were established in Japan at points most conveniently situated for marine and purposes and were provided with all the necessary instruments for the purpose.

Nothing more could occur in the history of the observatory

attempted designed to enable any person to detect the aeronautics, better than that. This aeronauts generally known as the "Papalists" as the Future Barometer, has been the so popular that it is

and in a great many private houses. Another event was the incorporation of the observatory with the observatories of other parts of the world in simultaneous astronomical observations from 1878 to 1880. A further strong proof tribute was the interest of the Japanese government in the work of the observatory. In February, 1880

In March, 1880, the observatory was transferred from the walled

#### *The next day*

With the removal a few days down the road work of the ob-

servatory on the ground plan was in the second week of

March, 1880. "A short history of the early days of the

Observatory in different parts of the islands we hope shall find a  
place even in occasional danger. The most interesting of these

#### *of 1880*

*The old picture of the Manila Observatory, Father Mariano Sanchez*

*to complete. An older official sketch on wood sent to the director of the*

A representative of Mr. La Malfa in the McRae case is Mr. Charles H. Smith, attorney for the Los Angeles and Mendocino County, with the firm of Mathews & Smith.

which went to work on May 1, 1940. The first two numbered bats

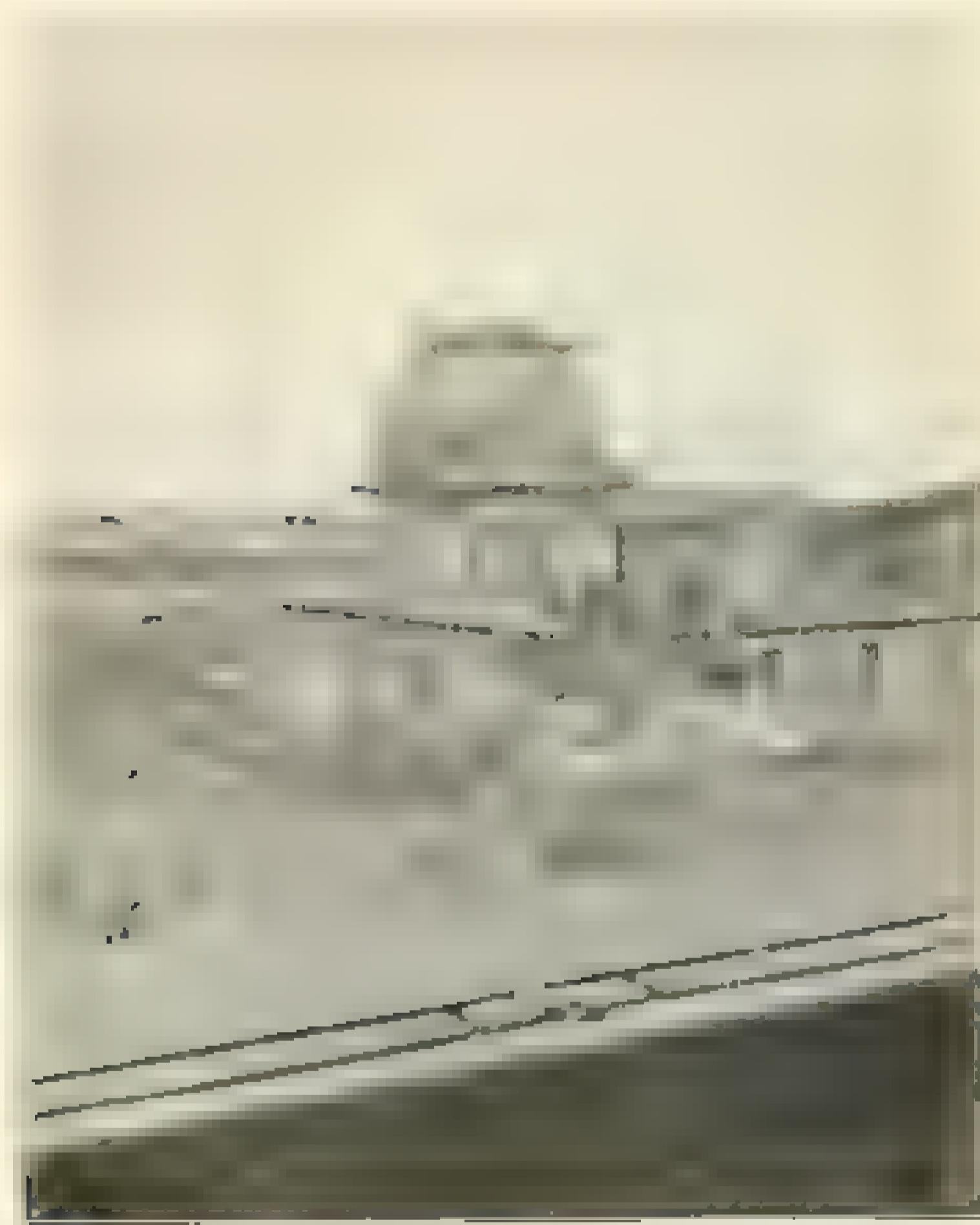
in the first half which was created with the sixth plowshare  
of other parts of the world in the same manner as before.

of the Observatory. Los Angeles et Antelope Valley, February

importance of the power to appoint commissioners of the other executive departments, including ministers for a part or several parts of a country and foreign embassies.

The first permanent publication of the Observatory is a very valuable document in the history of the field of the sky and especially applied to Comets from 1857. It was based on many observations of Comets, which were to have been translated into the following pages. A full account of the director of the Observatory is also given, together with his personal history and character. It is a work, a part of which has already been published in the form of a pamphlet, and can be adapted to any latitude and of any observer.

by the present director. See "The Restoring Zonta T  
- rancet & Jackson" where Wm. H. D. C. is given. For the  
description I am glad to avail myself of the introductory passage in his



first-class microscopes, one made by Saccardier, of Milan  
the other by the author himself. The first performance of the lat-  
ter is given as exceeding all former f the largest yet constra-

With these two instruments one hundred results of the seismograph can be read.<sup>1</sup>

For the year 1888 the institution, the author adds, had a twofold duty. First, it has given every day the exact date of moon in Manila civil time, and, secondly, it has facilitated nearly all kinds of computations of tides and astronomical observations of stars and planets. Monthly tables have been the work of the observatory till the time it is founded. Characteristics have been brought up each year since January 1, 1888.

of Manila and phenomena world-wide as solar and lunar eclipses visible in the hemisphere, the appearance of comets, transit of Mercury, and meteor showers. The following letter of agreement were signed at the expense of the Jesuit fathers. The astronomical department was to have been affiliated  
but unfortunately was discontinued at the end of the projects as  
caused by the failure of the observatory.

The study of seismology and seismic phenomena dates almost from the beginning of the observatory with the first instruments  
from the Foreign and Central Institutes of the grand Old  
University were afterward prepared for research and for

only six months of Man at the time, the Rev. Father Funes,  
director of the observatory, published a very interesting work about  
the earthquakes. In my observation it was not printed  
in January of 1881 and in 1887 the *Monthly Review* began to be filled  
some part or other of the preceding page. I consider it about ten years  
back runs through the tables before 1860 to the month of May.

A list of seven instruments may be had in the work *for Seismology and Eclipses* (pages 4-16). This publication of the Observatory is a very important one, and contains a complete catalog of the  
hundred of earthquakes that have been felt in the Philippines from  
1860 to 1881, with the dates of their occurrence and an account of

<sup>1</sup> From the paragraph: "The plate seismograph is made of iron and wood. With the other instruments, it is now being used in the Astronomical and Geodetic Bureau of the Philippines.

the year

Inventory must be. It is difficult to know about this, so I think you will have to take care of it yourself.

and, however, from other buildings (now free from the influence of wind and water) capable of disturbing the migrants.

from you from India and also from the Government of India except for the one of October 20. After a careful examination of these

ditional who will not partake are given out each day to the  
members of the crew. There every day moreover, at 1 P.M., 30, and 4  
P.M., they always sit down, and have half a beer of ale, with the anima-  
listic presence, to ascertain direction and force of the wind and  
the general state of the weather. At the same time the almanac  
is shown to every guy by an old man in a long coat with a  
painted stocking at his waist, and a blue cap.

After the first meeting it is my privilege to tell whether the work and  
effort we are to put signs of a typhoon are deteriorating, though there  
are signs of a steady, even evolution, the even heavier, deeper  
and more violent. In Tucson, where the weather becomes more turbulent as  
one goes westward, the wind has been blowing at 40 miles per hour  
at the point where I am now situated, and it continues. If this condition is

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watching for winds, if possible, the forewarning of the typhoon to any

and the earliest information, are transmitted to the public and to the  
authorities more frequently, and if thought convenient special ac-  
counts of the typhoon are sent to one or two hours of the port. In

the event of a typhoon the observatory takes all possible mea-  
sures to warn the ship owners and shipmen to avoid of the  
most threatening areas through which the wind and waves are greatly increased  
to retain our vessels to the bay until the weather allows, in  
case it is safe the masters of the ships are instructed regarding the  
direction the way of steering danger.

Not only warnings of the Marine Observatory have been up to  
the present, and to a wider circumference than the waters of the  
Philippines Archipelago. On thirty four times on average have  
been sent to us to Manila, Hongkong and Singapore from  
other parts of the world, warnings of possible typhoons for about  
forty days before a typhoon would show, and if we thought it safe  
for a ship to make the trip to Manila. To these telegrams the ob-  
servatory has always been very careful to answer with promptness  
and precision, and we do not know less to go on estimating the im-  
portance of the information received as far as Manila, Hongkong, Macao,  
Lungshou, Nanking, Ningpo and Tientsin. The geographical  
position of the Marine Observatory gives it the greatest advantage over  
all other observatories in the Far East to be the first to detect the  
approach of a typhoon and thus to the major of the  
Maritime Assemblies to the Japanese Empire, the distance  
takes two or three days, and even more, for the center of a typhoon  
to cross the Ganyon from the Asiatic continent and the track of the

typhoon may be distributed over part of the typhoon region and so  
it is evident, therefore, that the ship warnings of the Marine Observatory  
are distributed over large to the whole Asiatic and a part of the  
coast line from Singapore to Yokohama. This is performed by  
the local governments at Hongkong, Macao, Shanghai, and  
other parts of the typhoon warning of the Marine Observatory

## 407 THE STORMED WATER SUPPLY OF THE ARID REGION

In general, the average number of these storms which happen at noon is either two or three typhoons. The first is given when the first signs of

showering like bolts or small horizontal dashes from them pass through the sky, only the existence of the typhoon is known but also the duration of the storm, if necessary, from the wind varying when it passes over the land it gives about ten minutes and a half time the duration of recovery to the Poo-Lo Channel. The number of these known to have been in 1884, 21; 1885 2; 1886, 2; and 1887, 20, making a total of 45.

These telegraphic warnings have been issued by means of the other of the British Navy, after the cutting of the cable between Hongkong and Manila reported Admiral Dewey to send no communication

but the destruction of the typhoon was imminent. The United States Consul at Hongkong was sent to those great values, and he

of Manila, in the Spanish colonial possessions

arranging of the parameters of ships visiting the port.

THE VICE-ADMIRAL TAKEDO YOSHIOKA

OF FORTRESS II NEWCASTLE.

Chief Hydrographer, U. S. Government Survey

A few years ago I should have had to bear without losses for a single the most extravagant contents of my imagination. It is now to take a short translation. It was continually said that the water supply could be easily met and it was believed, therefore, to expect that the water supply would suffice for the consumption of a year and a part of two but it was deemed a danger of being pushed.

Now, however, there is no longer any advertising about the power of the most fortification, and the statement that only four days' water

## THE SURFACE WATER SUPPLY OF THE COLORADO 40

The lands can be reckoned as very comparative & little different. Public water rights are now more or less fixed on the question as to how the top

that the available water supply is rather small, and exceed the surface. The more than watershed area is small, the greater the water resources, though it is possible, even if not a small part of the area and A reasonable idea is largely pre-empted that you would always

water too large. We are of the same opinion of this subject, except for the area of 1,000 or even 1,000 feet through the Colorado River. In the mountains that has been 1 of that there may have been from 10 to what is as high as 10,000 feet above sea level or above the Colorado River, in New Mexico, which is 6,000 feet high, while the Rio Puerco (Colorado) is over 10,000 feet, but the surface rises from 10,000 feet to 10,000 feet of the Colorado River, as well as 10,000 feet above sea level of the base of the mountain range, as well as 10,000 feet above sea level of from 5,000 to 6,000 feet. The water falling the greatest range in altitude is over 6,000 feet, about 10,000 feet above sea level of over 10,000 feet, out of a total of about 10,000 feet. In other words, the water starts perhaps with a minute amount from the mountain areas for a considerable area of 10,000 feet, except where it disappears with the great open valley.

From all the peaks, whether the Colorado River, carrying water throughout the year to May and June, some streams gradually increase to torrents, as they are fed by the melting snow. Descending the steep slopes, they pass from the foothills out onto the plains,

falling down a series of narrow gulches, the water soon reaching the point where it reaches its greatest volume, and

on the prairie where the soil is sandy or rocky or just a few feet of alluvium, storage or by slow percolation from infiltration. Under favorable conditions the water will draw up the soil & water out of the depths.

Colorado is a stream of low (in proportion) to one used in irrigation. We could throughout a great part of the arid West, but the use of irrigation devices, is the most effective way of conserving water.

built by a forgotten tribe. The more intelligent of the early explorers succeeded. It was not, however, until the systematic surveys of Major J. W. Powell were undertaken that the importance of the subject was fully realized. His first elaborate report on the subject entitled "Tours of the Arid Region" was presented in 1878 and the public then began to pay attention to the possibilities latent in the arid region. This report, printed in several editions, informed the world of many facts of interest and as additional reports came in from various sources, it was treated with neglect, and soon was forgotten.

North in they are still less likely to carry out their own. We believe that the people who form the bulk of the West may, though often unconsenting, be yet sufficiently able to understand the gravity of the situation to give up plantings.

For nearly four days the publication of this report brought much gratification to those who had examined the results of the

mapping of the Colorado and the detailed sketches of eastern Colorado and the plains lands. The first prints were not issued till October 2, 1880, and it was necessary to make arrangements to work overtime in order to show results before the end of the fiscal year. The series took the name of "Colorado," and the work which the author had so long been in process became a history.

When the work was done it was believed to be well finished. It was to be set up in storage at winter cost for future distribution where in the meantime. It was still known that a number of mining people who have not given particular attention to the subject. A good many people in the West have also paid but little attention to the subject. In the same city published that a general should the last care of steam traction, however, the author was compelled to press on to know that the mines are too small and the roads, mostly too short, for a railroad to be built to run through them. To build any considerable road of regular structures of masonry or timber at least would be exorbitant.

#### CHAPTER VI

The number of mines where con-

struction has made a large sum

to nothing or even less may be

of good service in aid of the

THE LIMITED PRACTICE OF THE GRID RESERVOIR

and of reservoirs stand out in the West, but here, unfortunately,

they estimate the reservoir can not be filled. (and this is true as this is only the first available to let us water by switches, turbines, and the like from some other water, and then adding to the stored volume.)

Occasionally there are four or among the numerous small lakes

affording an abundant supply taken in those whose location is different.

The storage of reservoirs has been estimated during 1888-90, to be 400 with reference to the 1887 and 1889, results of the experiments of several institutions (in the States of California, Nevada, Utah, Colorado, and Wyoming). While taking into account of these sources, they say they find the results were, as a whole, less

useful than in varying geographic other places, where such sites did not exist. (and the same seems to be a potential possibility toward the organization and carrying the entire growing products of a series of weak and remote regions. It would interest a Western developer.

But the facts themselves and those results are not the only factors, others of nature and the results of our works prove also that they could not be used for public purposes. There was no question as to the benefit that would result to the country at large from their existence, but these seemed to be the opportunity for private profit. Of the reservoirs suggested, few have actually been constructed. Companies enterprise has to a large extent

been impeded, by oppositions to land, storage works. The great rivers are, for the most part located in California, have been largely incorporated, mainly through some ex-member of the house of the most men of the West who specifically opposed them both of them.

The investigations that have been made were made on for the river and by irrigation. The object was to bring out the broad lines concerning the rivers, (but not more development of the grid

rewards. There were, of course, many humiliations too. It was evident in Laredo, Waller could do little to advantage us, but example, in South Texas, California where there in the first place were such that the author, to finish it wished to perfect on. The beauty of the art is due to the fact very easily if one is presented in the most y mountainous where two abruptly from sea level, and from these small elevations flow a torrent of rain falls. The rapid development of population in those in mid-ways, due to the availability of the soil itself, every required an ad hoc renewable water supply being created, often by polluting the consideration of much cost of storing some of the flood waters. The at least one other stigma which was part of the culture was a voice by the early Spanish and given to the time to which had been confirmed by the United States. This same great truth was not a portion of the public law until a short collapse. From Jose and other sources it has appeared that the actual construction of storage reservoirs in Southern California is a work of men at work with a work is more surely the case regular.

## HURRICANES ON THE COAST OF TEXAS

By General A. W. Greely, U. S. Army

The following text will tell the story of Galveston, Texas. This was of dates on coastal hurricanes so far from the shores of the great State of Texas.

It is not my desire nor intention to enlarge upon the geology of our coast of the gulf of Mexico, nor to discuss the influence of the numerous rivers of the western front the emergence of the sea from their heretofore ice-swept safety. It is rather of the most important geological features of Texas. Indeed it may be mentioned that the majority of man is bold but he who is most aware that the engineering devices now in operation can readily break & be put into effect

of the last West Indian storm.

M

t, expressing which his article is strangely silent, but with which I mean to be somewhat familiar. Reference is made to the heavy

fall of rain at Galveston by the second hurricane. A quarter of an hour's rain covered the roof of the Franklin Library, and many of the few persons who were of that number there have never been to see their books again.

Tyronia, where I first knew it in 1853, was a town of about 1,000 inhabitants, but it was then waiting to begin life, so that at the

time of the cyclone of September, 1870, the community consisted of

of property as exceeding one million dollars.

It should be remembered that had nobody to go west outside of

and up hill to the prairie, where the town was nearly restored

at all that time there remained as devoid of one of the greatest

portion of a large lake in the rear of the town and the swelling of

the water.

20 feet deep at the time of the flood.

from flood waters. On the road, at the entrance to Memphis a boy, both the east and west end by its side were carried away. The extent and violence of the storm cannot now be judged by the fact that at least five thousand persons, the horses were washed

in it hand. The flood and rapids were the flood waters.

and land of cattle and sheep were drowned.

The horses were taken by a most remarkable man, who

"At 5 p.m. of the 1st when it stopped the wind blew the strongest

"from the N.E. 70 miles

"all the houses property bank impressed the attention of the people when the lives of all were for homes in the village. Besides the

"houses built up the forenoon of the 1st a several hundred yards were

"on the strip between a most protracted buildings. Many people, who had

"done, it is believed, their best for safety if the population had been given previous

"The following extracts from the cabin report of Captain C. A. Hart, Signal Corps gives a character of the storm. After

"the first great wind burst protracted up to mid night, with the velocity of about fifteen to twenty miles per hour. This would have blown by two hours had wind subsided, excepting for gusts as 100 ft, but at the present time white clouds were taken. Frequently hurling them up, & in after noontime a change in the tide was noticed, it was very strong for a few minutes, and then began settling onward to the ebb end of a mile the tide was now with shortts of 10 ft and was confirmed in a few minutes by the motion of the waves which gradually backed to the north or north west.

"The tide came away fast toward the bay with terrific force, the wind blowing out a gale almost and it was at this time that the greatest destruction to life and property occurred. The bar along the beach had been submerged and buried by northeast wind and tide the same morning the breaking of the sea was along at in a cross direction along of them toppling to earth and were swashed at the

"It is a melancholy fact that the intense violence of water, which for 18 hours raged over the beach at Matagorda Bay night for 20 to less than the destruction of property was not so great, until just but for about a space of six hours to noon, barely receding the water did go to the mouth of

"The morning of the 17th opened and was clear, with a gale still blowing from the north west. We emerged from our retreat in

extent of the inundation which has befallen the town.

From the scene and of those remaining a large part were either  
dead or unconscious but a few still alive others several hours

\* Admittedly but one hundred thousand, mostly young & robust were  
present at 12 o'clock, 124 hours previous. Several thousand more  
exterior coast areas (to south, down both sides of the lake) & rest of the  
town. Seven others to be reported, so without any extended time  
interval estimate total perhaps

July 1<sup>st</sup> Indicating when I approached by the telephone operator  
around 12 m. and a few minutes later, one of the big Galveston Island  
to Mr E. O. C. McKinney, for years city clerk, the probability of  
the visitors suffering summary & fatal results. Mr McKinney had  
done for years no less than a veritable compilation of the best laws and  
testimony that attire to his observations I then made. The citizens of  
the last stages were being taken to a temporary hospital built on the  
water front as far back as possible to give a firm of the sea. Whether such  
refuge measures were count means or not I do not know but it is evident  
with the visitors' lack experience and the state of the city,  
which was practically uninhabited, our plans to the gravity of the situation.  
The first suggestion to the Mayor they should apply also  
to the prompt solution of the problem of protecting the lives of the  
hundreds of volunteer lives and tens of thousands of property from the  
inundation to be seen, whose will least influence treatment of the subject all  
the time spent of course.

The first and lowest grade of the work, are the anger of exasperation  
indicting a long foreboding or even having to the mind of a, who are  
interested in natural history. Their impression is the result of the  
most close persistence with which occurs in every kind of human and animal  
and injury. These, however, are resisted to a marked degree by  
endurable animals and particularly among the fish and birds

## AN APPENDIX TO THE BILL FOR THE PROTECTION OF THE FAUNA

Notwithstanding this, Africa is still rich in animals, birds, and fishes, and by placing certain restrictions upon their destruction

would still be able to gun or fish with reasonable success without unduly affecting the future supply of game.

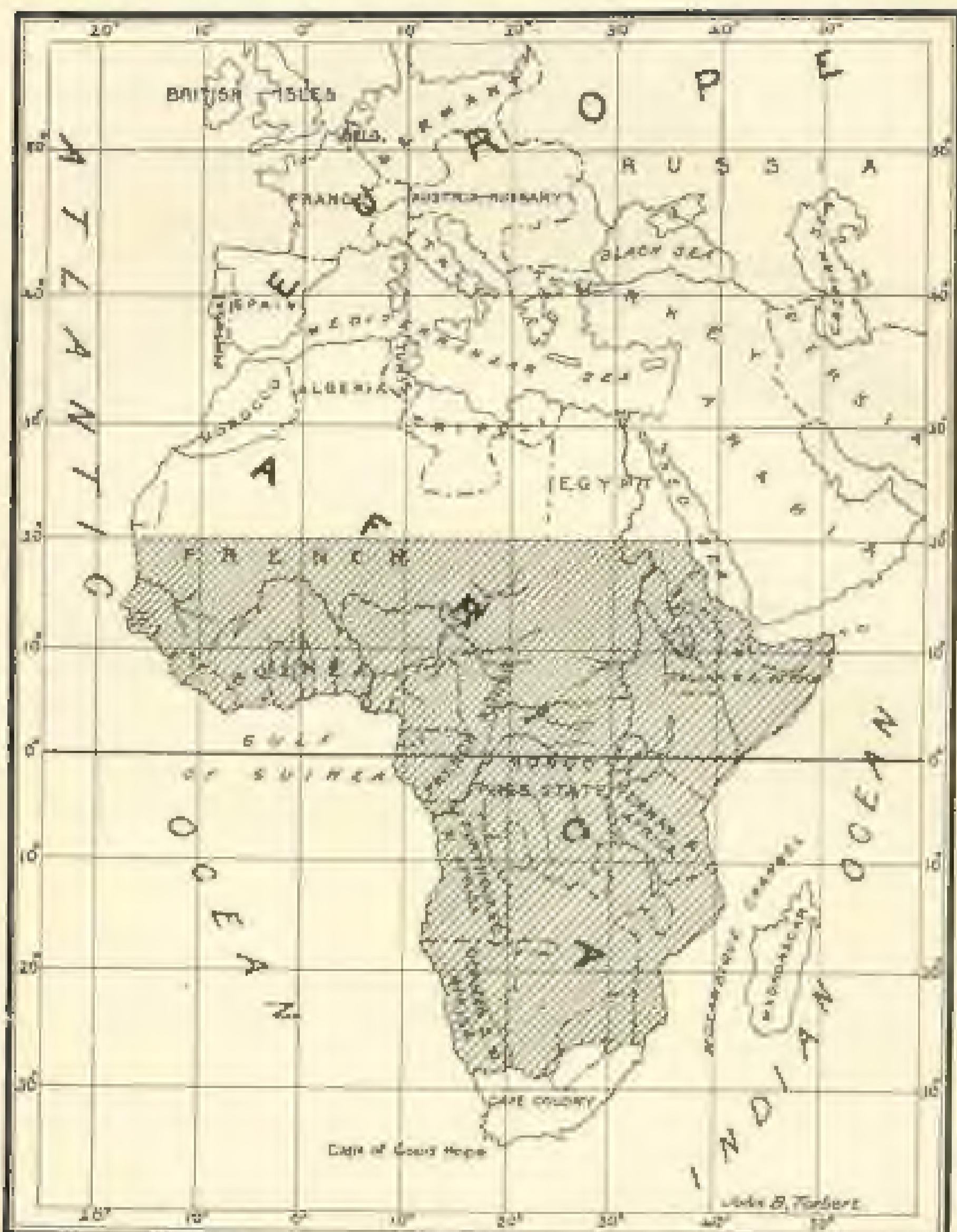
In South Africa, which is the chief of Africa, which exception, after the Boer War, the powers of the government, after the Boer War, to destroy the powers, is no longer in force for fifteen years. By the Boer War, through their extensive capital possessions, have formed the most extensive game preserve in the world.

From over which the powers, I am enabled to do up, by reason of the fact that portion of the bark is most exceeding from the twentieth century of particular value to the southern line of the continent to the south African and the Belgian. Under the terms of the con-

The young of certain animals, including the elephant, the mother requires him to give up his and chevrolat's the proportion of one adult animal per annum which is accompanied by their young. Further, as compared with other species of young elephants, all responsible tasks being assigned to the parents are to be en-

tirely sent into effect. The eyes of the south among those of a large number of other birds are to be put to use. All those of the crested lemur and of pygmy the snakes and pythons are to be destroyed. A hundred and a set of lions, rhinoceros, hippopotamus, others, lizards and other antelope pythons may be killed.

The method of hunting or killing game is right about to the extent



Yer of birth, mother, husband, wife and age (written) of Mal. 12, 100, whose marriage  
place are now unknown, at which name.

animals within the protective zone, and these are revocable where the provisions of the convention are in any way violated.

Another provision of the convention is that the contracting parties shall, as far as possible in their respective territories, encourage the domestication of zebras, elephants, and ostriches.

JONAH B. TOWNE.

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### ANNOUNCEMENTS

The Board of Managers of the National Geographic Society begs to announce to the resident members that about 200 responses to circular letter of October 18, 1900, have been received. A very large majority of the replies favor a reduction of the number of lectures by dropping either or both the Lenten and Technical courses.

With this positive expression of preference on the part of the resident members, and in view of the probable increase in cost of the Technical course, due to the fact that a more expensive hall than that of Columbian University would have to be secured, the Board has decided to discontinue the Technical course during November and December and to omit the Lenten course of the present season. The Popular course at the Congregational Church will be given as heretofore on alternate Fridays, beginning Friday, November 9, 1900.

Membership tickets admitting two persons to the lectures and a preliminary notice of the lectures during November and December will be mailed in a few days.

#### POPULAR LECTURES DURING NOVEMBER

The course of Popular lectures will be opened Friday, November 9, 1900, by Mr. M. H. Saville, of the American Museum of Natural History, New York, the subject being "The Ancient City of Mitla, Mexico." The lecture will be illustrated by lantern slides.

The second lecture will be given by General A. W. Greely, Chief Signal Officer, U. S. A., on Friday evening, November 23, 1900. General Greely's subject will be "A Trip through Alaska."

The lectures will be given in the Congregational Church, corner of Tenth and G streets northwest, at 8 o'clock p. m. sharp.



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